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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/824,725

04/14/2004

Rajiv Goel

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EXAMINER

AVELLINO, JOSEPH E

ART UNIT

PAPER NUMBER

2146

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/824,725

Applicant(s)

GOEL ET AL.

Examiner

Joseph E. Avellino

Art Unit

2146

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/5508)
- Paper No(s)/Mail Date 6/3/08
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 25-57 are presented for examination. The Office acknowledges the cancellation of claims 1-24 and the addition of claims 25-57.

Information Disclosure Statement

2. The IDS dated June 3, 2008 has been considered. See enclosed PTO-1449.

Claim Rejections - 35 USC § 101

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 46 is rejected under 35 U.S.C. 101 because they fail to establish a statutory category of invention.

3. Claim 46 recites an apparatus comprising means for language. As such, the means can reasonably be construed as software alone (§ 85). As such, the apparatus is a mere interrelationship of software elements, and therefore the apparatus fails to establish a statutory category of invention.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 25-30, 34, 36-41, 45-52, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conta et al. (US 2005/0086367) (hereinafter Conta) in view of Singh et al. (US 2005/0108315) (cited as pertinent prior art in previous Office Action) (hereinafter Singh).

4. Referring to claim 25, Conta discloses a method of selectively creating chains for a virtual interface (i.e. tunnel interface) comprising:

determining whether a new encapsulation chain (i.e. encapsulation engine) should be created, on a network element for a particular virtual interface (i.e. tunnel endpoint/interface) by determining whether at least one physical port (i.e. L2 or L3 interface) on the network element is configured to send data packets of a type that would be produced by an encapsulation chain for the particular virtual interface and can send packets toward a destination associated with the particular virtual interface and creating on the virtual interface the encapsulation chain if it is so determined (i.e. a tunnel endpoint is inherently created in order to establish communications via a tunnel, and based on the particular endpoint type will determine whether an encapsulation engine should be created, and will create one if the tunnel interface is a transmitting interface) (¶ 33, 58, 81; Figures 2-4);

determine whether a new decapsulation chain (i.e. decapsulation engine) should be created for the particular virtual interface (i.e. tunnel endpoint/interface) by determining whether at least one physical port is configured to receive data packets of a type that would be processed by a decapsulation chain for the particular virtual interface

and will create the decapsulation chain if it is so determined (i.e. a tunnel endpoint is inherently created in order to establish communication via a tunnel, and based on the particular endpoint type, such as sending or receiving, will determine whether a decapsulation engine should be created and will create one if the tunnel interface is a receiving interface) (§§ 33, 58, 81; Figures 2-4).

Conta is silent on the architecture of the network element that it would comprise a card comprising the physical ports. In analogous art, Singh discloses another network routing element comprising a plurality of forwarding elements 20, 22 such as line cards (which inherently include a plurality of physical ports) connected via a backplane 24 (Figure 1; §§ 10-11). It would have been obvious to one of ordinary skill in the art to combine the teaching of Conta with Singh in order to utilize modular circuitry as described in Singh in the element of Conta in order to easily replace defective boards and to easily upgrade the system to the administrator's liking.

5. Referring to claims 26 and 27, Conta discloses that if a new encapsulation/decapsulation chain should not be created, then avoid creating the particular chain on the interface (i.e. each end of a tunnel will consist of either a "transmit" interface, which will not create a decapsulation chain, or a "receive" interface, which would not create an encapsulation chain, or a bidirectional tunnel would include both types of interfaces) (§§ 81).

6. Claims 28-30 are rejected for similar reasons as stated above (i.e. a receive interface would not create encapsulation engines, and a transmit interface would not create a decapsulation engine) (Figures 3,4).

7. Referring to claim 34, Conta discloses the invention as described above. Conta does not specifically disclose that the numbers are set by user input, however user input is well known in the art (i.e. network administrators selecting which elements to execute which particular programs, etc.). By this rationale, "Official Notice" is taken that both the concepts and advantages of providing for user input is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to modify Conta to have a user select which particular devices have which particular engines in order to tailor the network to the particular administrator's liking.

8. Claims 36-41, 45-52, and 56 are rejected for similar reasons as stated above.

Claims 31-33, 35, 42-44, 53-55, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conta-Singh as applied above in view of Tuniman et al. (USPN 6,507,874) (hereinafter Tuniman).

9. Referring to claims 31-33, Conta discloses the invention as described in claim 1. Conta does not disclose that neither a decapsulation chain nor an encapsulation chain is created on the particular network element. IN analogous art, Tuniman discloses

another network interface device which discloses a plurality of network cards which perform specialized processing with respect to inputted data (Figure 7) and therefore do not create a particular encapsulation/decapsulation chain on the particular element, rather this processing is done by specialized translators (e.g. abstract). It would have been obvious to one of ordinary skill in the art to combine the teaching of Tuniman with Conta in order to offload processing of various processes to specialized processors, thereby reducing overhead processing with respect to the network element.

10. Claims 35, 42-44, 53-55, and 57 are rejected for similar reasons as stated above.

Response to Arguments

11. Applicant's arguments filed July 3, 2008 have been fully considered but they are not persuasive.

12. Applicant argues, in substance, that the receive and transmit "tunnel" interfaces are separate entities separated by a network, and therefore cannot be construed as the same virtual interface. The Examiner disagrees. Applicant's attention is directed to ¶ 81 which states that a bidirectional tunnel would have both types of interfaces at each end. This clearly shows that each "end" of the tunnel can clearly have a transmit interface, and a receive interface, as well as only having either a transmit interface, or a receive interface. By this rationale, the rejection is maintained.

13. Applicant argues, in substance, that the Examiner is incorrect in interpreting that the "means" can be software alone. The Examiner disagrees. Even though Applicant provides a plurality of hardware examples which can be used to implement the particular system, a broad interpretation of the specification indicates that the claim can be construed as software alone. The Examiner never states that only software is used to implement the invention, rather that the "means" can be construed as software. As such, since none of the means are tied solely to any hardware piece (rather can be either software or hardware), the rejection is proper. Applicant is invited to put on the record a complete disavowal of any non-statutory embodiments of the "means" such that the means are directed to some hardware element.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph E. Avellino whose telephone number is (571) 272-3905. The examiner can normally be reached on Monday-Friday 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey C. Pwu can be reached on (571)272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Joseph E. Avellino/

Primary Examiner, Art Unit 2146